UNIT 7: DETERMINATION OF INTEREST RATE: KEYNESIAN APPROACH

UNIT STRUCTURE

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7.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- derive the meaning of interest rate
- discuss the determination of Interest rate as a monetary phenomenon
- explain the concept of demand for money including transaction demand for money, precautionary demand for money and speculative demand for money
- briefly define the concepts of 'bulls' and 'bears'
- explain the liquidity preference theory of interest.

7.2 INTRODUCTION

This unit is intended to familiarsing you with some basic concepts about interest rate, determination of the interest rate as a monetary phenomenon, transaction demand for money, precautionary demand for

money, speculative demand for money and liquidity preference theory of determination of interest rate.

In ordinary language, interest is the price for the use of capital. Beginning from the classical economist such as Adam Smith, David Ricardo, there has been a vast literature explaining the nature and determination of the interest rate.

The transaction demand for money is the money required by the community for carrying out day to day transactions

The precautionary demand for money is the money required for emergencies and unforeseen contingencies like illness, accidents, unemployment and any other economic misfortune as well as money kept to take advantage of unforeseen opportunities.

The speculative motive for holding money relates to taking advantage of future market movements.

The terms bulls and bears are used to describe general actions and attitudes of participants in a stock market. A bear market refers to a decline in prices, usually for a period of a few months, in a single security or asset, group of securities or the securities market as a whole. A market is said to be bull market is when prices of securities or assets are rising.

Liquidity preference theory of determination of interest rate is one of the important theory of determination of interest rate. According to this theory, interest is reward for parting with liquidity for a specified period.

7.3 KEYNESIAN APPROACH TO DEMAND FOR MONEY

John Maynard Keynes explained the theory of demand for money in his famous book, *The General Theory of Employment, Interest and Money,* which was published in 1936. Keynes made the demand for money a function of two variables, namely, income and rate of interest. Keynes explained that people demand money basically for three motives, namely, transaction, precautionary and speculative demand for money. The significant element of the Keynes theory of demand for money is the component called of the speculative demand for money. Detailed discussion

of these three elements of the demand for money is presented in the next sections of the unit.

7.3.1 Transaction Demand for Money

The transaction demand for money is the money required by the community for carrying out day to day transactions. A household has to make purchases of articles which are to be ordinarily used by the household. A producer has to purchase different materials and services for carrying on the productive activities. The significance of the transaction demand for money arises from the fact that there is always a time lag between receipt of money income and expenditure on purchase of different goods and services. The time lag is different for different sections of people. Some people like to spend a major proportion of their income in the first week of the month while others may evenly distribute spending over the four weeks etc. An individual, household, or business firm must hold some amount of their income to bridge this gap. The planned level of real expenditure in the community depends upon the real income. The demand for transaction balances, must, therefore depend upon the real income. There is a direct functional relationship between transaction demand for money and level of income or receipt. The relation between transaction demand for money and level of income may be expressed as:

$$MD_T = f(Y)$$

where MD_T is transaction demand for money and Y is income.

Now, if we assume a linear and proportionate relationship as given in the above equation, the relation will be stated as:

$$MD_T = KY$$

Now, As K increases or decreases the demand function will shift to the right or to the left.

7.3.2 Precautionary Demand for Money

Along with transaction demand for money, most of the people hold some amount of cash in excess of the minimum required to meet the day to day transactions. The surplus amount is kept to meet the unforeseen emergencies like sickness, accidents etc. The economist W.W.Haines pointed out that precautionary demand for money is influenced by the factors such as size of assets, availability of insurance, expectation of future income or receipts, availability of credit. There is a direct relation between the size of the asset and holding of cash for precautionary purposes. The proper availability of insurance facilities reduces the necessity of maintaining cash reserves. If a person is certain that sufficient provision will be made by the insurance company for his family in the event of his death, he will not feel any necessity of keeping large precautionary balances. Some surplus cash is also kept to avail the opportunities that may arise unexpectedly. For example, while shopping for commodities, you may find a good bargain you had not planned for.

7.3.3 Speculative Demand for Money

We all know that wealth can be held in the form of landed property, bonds, money, bullion, etc. For the sake of simplicity, we can classify all other forms of assets except money, as a single entity called bonds. In fact, Keynes himself categorised assets into two types, viz., money and bonds.

A rational economic agent always tries to maximise his/her gains or earnings. Now, how to make best use of the two types of wealth, viz., money and bonds one has. Let us consider the fact that if we deposit cash in saving bank account, we earn interest and if we purchase bonds, we get monetary return on it. People often compare rate of return on bond with rate of interest on bank deposits. Thus, it is 'speculation' about future changes (rise/fall) in interest rate and bond prices that the resulting demand for money is called

'speculative demand for money'. This is the reason why the speculative demand for money has also been explained as ''Securing profit from knowing better than the market what the future will bring forth". The basic idea is to make money (monetary gain) out of money.

Now, to discuss how a person can maximise his/her gains from the two types of wealth, let us consider the relationship between bond price and interest rate and the relationship between rate of interest and speculative demand for money.

Price of a bond is inversely related to market rate of interest. To explain this, let us consider an example. Suppose, Rs 1,000 bond yields fixed return of 10% per annum. This means the bond has fixed annual Income of Rs 100. Now, let us assume that the rate of interest in saving bank account falls from the existing 10% per annum to 8% per annum. The question is how much money kept in bank will fetch interest of Rs 100 (equal to return from bond) after one year at the interest rate of 8%?

Let us suppose, X is the amount, then the amount will be 8% of X = 100, or X = [100 x (100/8)]. In our case, the amount would be Rs 1,250. Clearly, Rs 1,250 kept in saving bank account will give the same return (i.e., Rs 100) as Rs 1,000 invested in bond. Naturally, people will prefer to buy bond than to deposit cash in bank. Thus, we can say that with a fall in the market rate of interest (i.e., bank deposit interest) price of bond rises and vice versa. In other words, price of bond is inversely related to market rate of interest. In fact, such speculation about changes (rise/fall) in interest rate and bond prices gives rise to speculative demand for money.

Now, let us consider the relationship between speculative demand for money and the rate of interest. Speculative demand for money is inversely related to the rate of interest, i.e., higher the rate of Interest, smaller will be speculative demand for money and vice versa.

7.3.4 Bulls and Bears

As discussed in the introductory section, the terms bulls and bears are used to describe general actions and attitudes, or sentiment, either of an individual or the market. These terms are more often used in stock market to explain the behaviour of a participant. A bear market refers to a decline in prices, usually for a period of a few months, in a single security or asset, group of securities or the securities market as a whole. A bull market is when prices are rising. The terms “bear” and “bull” are derived from the way in which each animal attacks its opponents. While a bear will swipe down its opponents, a bull will thrust its horns up into the air. These actions were then related metaphorically to explain the movement of a market. If the action of a broker leads to increase in stock prices, he is considered to be a bull. On the other hand, if the action of the broker results in fall in stock prices, he is considered to be bear and the market is known as bear market.

In our previous discussion we have mentioned that speculative demand for money arises out of anticipated change (rise/fall) in interest rates and bond prices. People, as speculators, can be broadly classified into two categories: bulls and bears. Bulls are those who expect the bond prices to rise in the future. On the contrary, bears expect the bond prices to fall. In Keynesian analysis, these expectations are assumed to be held with certainty. Bulls, then, are assumed to invest all their idle cash into bonds. On the contrary, bears will move out of bonds into cash if their expected capital losses on bonds exceed interest income from bond-holding. In this way, they would try to minimise their losses. Thus, the speculative demand for money arises only from the bears. Thus, in this sense, speculative demand for money is the demand for bearish hoards. These bears build up their cash balances to move into bonds when either bond prices have fallen as expected or when they come to expect that bond prices will rise in future.



ACTIVITY 7.1

Explain the transaction and precautionary demand for money with the help of a hypothetical example.....

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CHECK YOUR PROGRESS

Q 1: State whether the following statements are true (T) or false (F).

(a) Transaction demand for money is a function of income. (T/F)

(b) The theory of rate of interest, according to the classical economist, is determined by the supply and demand for capital (T/F)

Q 2: What do you mean by demand for money? (Answer in about 40 words).....

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7.4 LIQUIDITY PREFERENCE THEORY OF DETERMINATION OF INTEREST RATE

The liquidity preference theory of determination of interest rate was put forward by the economist John Maynard Keynes. Keynes defines the rate of interest as the reward for parting with liquidity for the specified period. According to Keynes, it is not the price which brings into equilibrium the demand for resources to invest with the readiness to abstain from consumption. It is the price which equilibrates the desire to hold wealth in the form of cash with the available quantity of cash. The rate of interest,

according to Keynes, is determined by the demand for and supply of money. Of all the two determinants of the rate of interest, the supply of money refers to the total quantity of money for all purposes at all time. Though the supply of money is a function of the rate of interest, it is considered to be fixed by the monetary authorities. As a result, the supply curve of money is taken as perfectly inelastic.

For the second determinant of the demand for money, Keynes used a new term "liquidity preference" for which this theory we discussed is known as liquidity preference theory of money. The rate of interest can be explained as the premium which has to be offered to induce people to part with cash. The higher the liquidity preference, the higher will be rate of interest that will have to paid to the holder of cash to induce them to part with their liquid asset. As a result, the lower the liquidity preference, the lower will be the rate of interest that will be paid to the cash-holders. As discussed above, there are three motives behind holding cash by the people such as transaction motive, the precautionary motive and speculative motive. The transaction motive relates to the need of cash for current transactions for business and personal exchanges. It can be further divided into income and business purposes. As discussed in our previous section, income motive is meant to bridge the gap between receipt of income by an individual and its disbursements. The business motive of an individual can be explained as the interval between the expenditure incurred and receipt of income. Along with transaction demand for money, there is another motive for which people want to keep cash in hand which is known as precautionary demand for money. The precautionary motive relates to the desire of the people to keep cash in hand for unforeseen expenditure.

According to Keynes, the transaction and precautionary demand for money are comparatively highly income elastic and interest inelastic. The money held under these two motives is a function of the level of income. It can be explained as:

$M_1 = L_1 (Y)$

where M_1 represents transaction and precautionary demand for money, Y represents income.

Keynes is of the view that speculative motive is an attempt to gain by knowing better than the market what the future will bring forth. If the people have fund after meeting transaction and precautionary demand for money, they like to gain by investing in financial assets. According to Keynes, it is expectation about changes in asset prices or in the current rate of interest that determines the speculative demand for money. The speculative demand for money is a decreasing function of rate of interest. The higher the rate of interest, the lower is the speculative demand for money. On the other hand, the lower the rate of interest, the higher is the speculative demand for money. Algebraically, the speculative demand for money can be explained as:

$M_2 = L_2(r)$,

where, M_2 is the speculative demand for money, r is the rate of interest.

The curve for speculative demand for money is a smooth curve which slopes downward from left to right. At a very low rate of interest, the speculative demand for money is perfectly elastic. The portion of the curve where it is perfectly elastic is known as the liquidity trap.

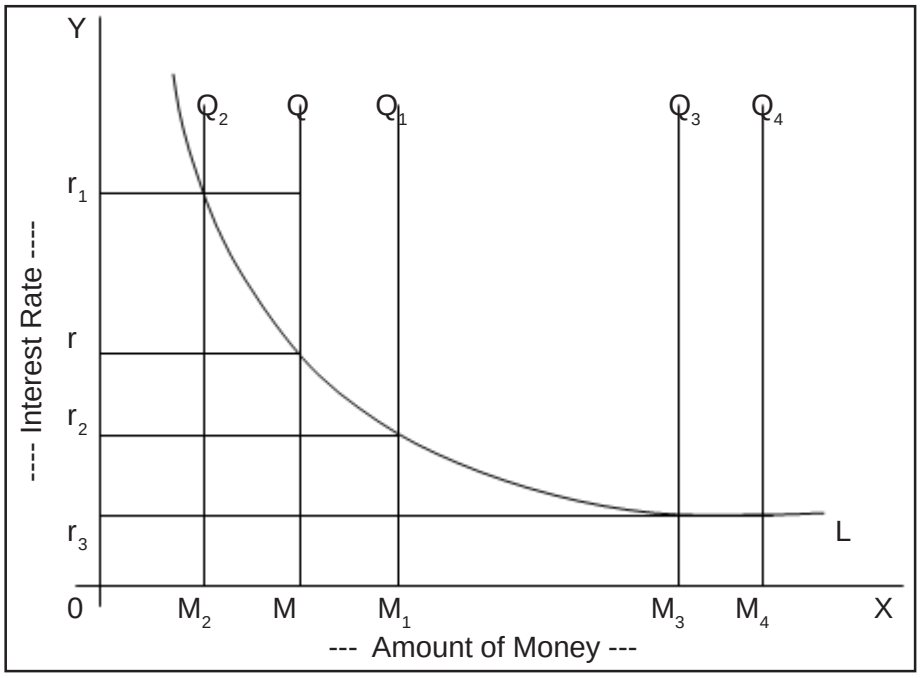
Now, if the total liquid money is expressed as M and transaction plus precautionary demand for money as M_1 and speculative demand for money as $M_{2,}$ then M is nothing but the summation of M_1 and $M_{2.}$ Now, total demand for money can be expressed as:

$$M = M_1 + M_2$$

$$M = L(Y, r)$$

We have discussed the demand and supply of money. Now, we will examine how demand and supply of money determine the rate of interest. The rate of interest is determined at a level where demand for money is equal the supply of money. It can be explained with the help of a suitable diagram represented by figure 7.1.

Figure 7.1: Determination of Interest Rate



In the above figure, the vertical lines represent supply of money which is considered to be fixed at any point of time. If the supply of money is increased by the monetary authorities, as the liquidity preference curve L remains the same, the rate of interest will fall. As supply of money has increased from Q_2M_2 to QM, the rate of interest has fallen from r_1 to r. Similarly, as the supply of money has increased from QM to Q_1M_1, the rate of interest has fallen from r to r_2. But any further increase of supply of money from the point Q_3M_3 has no effect on the rate of interest because the liquidity preference curve is perfectly elastic at r_3 rate of interest. The perfectly elastic portion of the liquidity preference curve is known as liquidity trap where the L curve is parallel to the X axis. Thus, the theory explains that the rate of interest is determined at the point where liquidity preference curve equals the supply of money curve.



CHECK YOUR PROGRESS

Q 3: State whether the following statements are true (T) or false (F).

(a) Speculative demand for money is a function of rate of interest. (T/F)

(b) The supply of money at any particular point of time (T/F)

Q 4: What do you mean by liquidity trap? (Answer in about 40 words)

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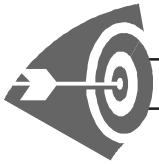
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7.5 LET US SUM UP

- There has been a vast literature explaining the nature and determination of the interest rate. Generally, Interest is said to be the price to be paid for the use of capital.
- The transaction demand for money is nothing but the money required by the people for carrying out day to day transactions.
- The transaction demand for money is a function of income.
- The money required for emergencies and unforeseen contingencies like illness, accidents, unemployment etc. also to avail the unforeseen opportunities is known as precautionary demand for money.
- The speculative demand for money arises from the attempt to make a gain knowing better about the future.
- Liquidity preference theory of determination of interest rate is one of the significant contributions of Keynes towards the explanation of interest rate. According to this theory, interest is a reward for parting with liquidity for the specified period.
- At a very low rate of interest, the Liquidity preference curve is parallel to the horizontal axis. That portion of the liquidity preference curve is known as 'liquidity trap'.



7.6 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: (a) True (b) True

Ans to Q No 2: Demand for money means people's desire to hold money for various purposes such as medium of exchange, money as unit of account, money as a standard of deferred payment, and money as a store of value.

Ans to Q No 3: (a) True (b) True

Ans to Q No 4: At a very low rate of interest, the liquidity preference curve is perfectly elastic. In other words, the L curve is parallel to the X axis. That portion of the curve is known as liquidity trap.



7.7 FURTHER READING

1) Jhingan, M. L. (2014). *Advanced Economic Theory. New Delhi:* Vrinda Publication Pvt. Limited

2) Gupta, R.D., & Rana, A.S. (2009). *Keynes and Post-Keynesian Economics*, Jalandhar: Kalyani Publisher.

Rana, K.C. & Verma, K.N. (2009). *Macroeconomic Analysis*, Jalandhar: Vishal Publications.



7.8 MODEL QUESTIONS

A) Answer each question in about 150 words.

Q 1: What do you mean by transaction demand for money?

Q 2: Discuss the factors which influence the speculative demand for money?

Q 3: What do you speculative demand for money? Explain in brief.

Q 4: What do you mean by bull and bear.

B) Answer each question in about 300-500 words.

Q 1: What do you mean by liquidity preference? How preference of the people towards liquidity helps in determination of interest rate?

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